

**Claims**

1. A control cage for an abrasive blasting wheel, comprising:  
a housing forming an interior chamber;  
5 a blast media outlet positioned in the housing, and  
a channel formed in an inner side of the housing.
2. The control cage of claim 1, wherein:  
the channel further comprises a step on the inner side of the housing.
- 10 3. The control cage of claim 1, wherein:  
the channel further comprises a ridge on the inner side of the housing.
4. The control cage of claim 1, wherein:  
15 the housing has a first thickness in a portion that does not include the channel  
and a second thickness, less than the first thickness, in a portion that includes the  
channel.
5. The control cage of claim 1, wherein the channel is between about 0.0625 and  
20 about 0.25 inches deep.
6. The control cage of claim 5, wherein the channel is about 0.125 inches deep.
7. The control cage of claim 1, wherein the channel has a depth that varies across  
25 its width.
8. The control cage of claim 1, wherein the channel has a depth that varies along  
its length.
- 30 9. The control cage of claim 1, further comprising indicia to denote the position  
of the blast media outlet.

10. A distribution device for an abrasive blasting wheel, comprising:  
an impeller having a media inlet at one end adapted to receive blast media and  
a plurality of impeller media outlets constructed and arranged to allow egress of the  
blast media upon rotation of the impeller;
- 5 a control cage surrounding the impeller and having a cage media outlet  
adapted for passage of the blast media; and  
a channel formed between the impeller and the control cage.
11. The distribution device of claim 10, wherein:  
10 the channel is formed on an inner side of the control cage.
12. The distribution device of claim 10, wherein:  
the channel is formed on an outer side of the impeller.
- 15 13. The distribution device of claim 10, wherein:  
the channel is formed on both an inner side of the control cage and an outer  
side of the impeller.
14. The distribution device of claim 10, wherein:  
20 a distance between the impeller and a portion of the control cage that includes  
the cage media outlet is greater than a distance between the impeller and a portion of  
the control cage that does not include the cage media outlet.
15. The distribution device of claim 10, wherein the channel is between about  
25 0.0625 and about 0.25 inches deep.
16. The distribution device of claim 15, wherein the channel is about 0.125 inches  
deep.
- 30 17. The distribution device of claim 10, wherein the channel has a depth that  
varies across its width.

18. The distribution device of claim 10, wherein the channel has a depth that varies along its length.

5 19. An abrasive blast wheel assembly, comprising:  
a wheel having a face and an axis generally perpendicular to the face;  
a plurality of vanes extending from the face of the wheel, each vane having a  
heel end towards the axis of the wheel and a discharge end opposite the heel end;  
an impeller positioned about the axis of the wheel, the impeller having a media  
10 inlet at one end adapted to receive blast media and a plurality of impeller media  
outlets constructed and arranged to allow egress of blast media upon rotation of the  
impeller;  
a control cage surrounding the impeller and having a cage media outlet  
adapted for passage of blast media to the heel ends of the vanes; and  
15 a channel formed between the impeller and the control cage.

20. The abrasive blast wheel assembly of claim 19, wherein:  
the channel is formed on an inner side of the control cage.

20 21. The abrasive blast wheel assembly of claim 19, wherein:  
the channel is formed on an outer side of the impeller.

22. The abrasive blast wheel assembly of claim 19, wherein:  
the channel is formed on both an inner side of the control cage and an outer  
25 side of the impeller.

23. The abrasive blast wheel assembly of claim 19, wherein the channel is  
between about 0.0625 and about 0.25 inches deep.

30 24. The abrasive blast wheel assembly of claim 23, wherein the channel is about  
0.125 inches deep.

25. The abrasive blast wheel assembly of claim 19, wherein the channel has a depth that varies across its width.

5 26. The abrasive blast wheel assembly of claim 19, wherein the channel has a depth that varies along its length.

27. The abrasive blast wheel assembly of claim 19, wherein:  
a distance between the impeller and a portion of the control cage that includes  
10 the cage media outlet is greater than a distance between the impeller and a portion of  
the control cage that does not include the cage media outlet.